Exhibit 1

Docket: 0357-0003

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re PATENT application of	)	
SAINTON, Joseph	)	
Serial No. 08/167,002	)	Art Unit: 2611
Filed: December 15, 1993	)	Examiner: Urban
For: APPARATUS AND METHODS FOR NETWORKING OMNI-MODAL RADIO DEVICES	)	

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to: Commissioner of Patents and Trademarks, Washington, D.C. 20231, on May 18, 1995.

AMENDMENT

Honorable Commissioner of Patents and Trademarks

Washington, D.C. 20231

Sir:

Please amend the above identified application as follows:

In the Title:

Please change the title of the invention to read "Apparatus and Methods for Reallocation of Radio Spectrum."

In the Specification:

Page 17, line 20, please change "alos cpable" to –also capable–.

Page 33, line 23, please change "obatins" to –obtains–.

line 25, please change "slection" to –selection–.

In the claims:

1. (amended) A radio frequency management system for reallocation of radio spectrum among a plurality of wireless communication networks using differing [transmission] radio frequency modulation protocols [and/or] and differing radio frequencies to communicate with a plurality of frequency and protocol agile portable radio devices each of which is responsive to portable radio device control signals to change its operating frequency and [transmission] modulation protocol, comprising

capacity detection means for generating a frequency request signal upon determining that a first wireless communication network operating using a first radio frequency spectrum allocated to said first wireless communication network and using a first modulation protocol, is at or near full capacity,

frequency reallocating means responsive to a frequency request signal to reassign temporarily radio spectrum from a second wireless communication network operating using a second radio frequency spectrum allocated to said second wireless communication network and different from said first radio frequency spectrum and using a second modulation protocol, [utilizing less of its normally assigned allocated radio frequency] to the first communication network determined by said capacity detection means to be at or near full capacity, and

means for causing portable radio control signals in at least some of the frequency and protocol agile portable radio devices to change their operating frequency and

[transmission] modulation protocol to permit the portable radio devices so changed to communicate over the temporarily reassigned radio spectrum.

2. (amended) A radio frequency management system as defined in claim 1, further including a plurality of frequency and protocol agile portable radio devices for facilitating wireless communication over any one of a plurality of wireless communication networks at least some of which may be available and operating at a given time and location using differing radio frequency modulation protocols and over differing radio frequencies, each of which includes

a frequency agile radio transceiver [adapted to operate] operating at any one frequency of a plurality of radio frequencies [a radio frequency] appropriate for each of the plurality of wireless communication networks, said one frequency selected in response to [as determined by] a frequency control signal,

a digital interface circuit for interconnecting said frequency agile radio transceiver with external digital signal processing devices to allow digital signal information to be sent and received over said frequency agile radio transceiver,

protocol agile operating circuit means for operating said frequency agile radio transceiver and said digital interface circuit in accordance with any one modulation protocol of a plurality of [the transmission] modulation protocols, said one modulation protocol selected in response to [as determined by] a protocol control signal, and

adaptive control means for determining which wireless communications networks are available at a given location and time, for accessing a selected wireless communication network and for generating the frequency control signal and the protocol control signal in response to a user defined criteria to cause the device to communicate with the selected wireless communication network using [the] a frequency [determined by the frequency control signal] and [the] modulation protocol suitable for transmission

of said digital signal information over said selected wireless communications network [determined by the protocol control signal].

3. (amended) The radio frequency management system defined in claim 2, wherein said adaptive control means selects the wireless communication network based on the least cost.

4. (amended) The radio frequency management system as defined in claim 2, wherein said adaptive control means selects the wireless communication network based on the quality of the radio transmission link connecting said frequency agile transceiver and the selected wireless communication network.

5. (amended) The radio frequency management system as defined in claim 2, wherein said adaptive control means selects the wireless communication network based on the probability of being dropped from the network.

6. (amended) The radio frequency management system as defined in claim 2, wherein said adaptive control means selects the wireless communication network based on the security of the radio transmission link connecting said frequency agile transceiver and the selected wireless communication network.

7. (amended) The radio frequency management system as defined in claim 2, wherein said adaptive control means selects the wireless communication network based on prior experience with specific wireless communication networks.

8. (amended) The radio frequency management system as defined in claim 2, wherein said adaptive control means selects the wireless communication network based on the combined determination of two or more of the following:

the cost of using the wireless communication network,

the quality of the transmission link connecting said frequency agile transceiver and the selected wireless communication network,

prior experience with specific wireless communication networks,

the potential of being dropped from the network, or

the security of the radio transmission link connecting said frequency agile transceiver and the selected wireless communication network.

9. (amended) The radio frequency management system as defined in claim 2, wherein said adaptive control means [is adapted to communicate in accordance with an electronic handshake] communicates with selected wireless communication networks to determine on a real time basis the [cost for desired services and] operating characteristics of the corresponding wireless communication network.

10. (amended) The radio frequency management system as defined in claim 2, further including a modem means operating to perform at least one of modulation or demodulation of [for modulating and/or demodulating] a carrier signal with user data.

11. (amended) The radio frequency management system as defined in claim 10, further including a data processor means for processing digital data [sent and/or received] transmitted over said frequency agile transceiver.

12. (amended) The radio frequency management system as defined in claim 11 for use with wireless communication networks having call placement and call answering

functions, wherein said data processor means [is adapted to cause] causes said frequency agile transceiver to control telephone call placement and call answering functions over wireless communication networks having such telephone functions.

13. (amended) A method for reallocation of radio frequency spectrum among a plurality of wireless communication networks at least some of which may be available and operating at a given time and location using differing [transmission] radio frequency modulation protocols [and/or] and over differing radio frequencies to communicate with a plurality of frequency and protocol agile portable radio devices each of which is responsive to portable radio device control signals to change its operating frequency and [transmission] modulation protocol, comprising the steps of

generating a frequency request signal upon determining that a first wireless communication network is at or near full capacity,

reassigning temporarily in response to [a] said frequency request signal radio spectrum from a wireless communication network utilizing less of its normally assigned radio frequency to the communication network determined to be at or near full capacity, and

causing portable radio control signals in at least some of the frequency and protocol agile portable radio devices to change their operating frequency and [transmission] transmission protocol to permit the portable radio devices so changed to communicate over the temporarily reassigned radio spectrum.

14. (amended) A method as defined in claim 13, comprising the further steps of

operating a frequency agile radio transceiver at any one frequency of a plurality of radio frequencies [a radio frequency] appropriate for each of the plurality of wireless

communication networks, said one frequency selected in response to [as determined by] a frequency control signal,

interconnecting said frequency agile radio transceiver with external digital signal processing devices to allow digital signal information to be sent and received over said frequency agile radio transceiver,

operating said frequency agile radio transceiver in accordance with any one modulation protocol of a plurality of [the transmission] modulation protocols, said one modulation protocol selected in response to [as determined by] a protocol control signal, and

determining which wireless communications networks are available at a given location and time and accessing a selected wireless communication network by generating the frequency control signal and the protocol control signal in response to a user defined criteria to cause the device to communicate with the selected wireless communication network using [the] a frequency [determined by the frequency control signal] and [the] modulation protocol suitable for transmission of said digital signal information over said selected wireless communications network [determined by the protocol control signal].

Please add new claims 23-24 as follows:

–23. A radio frequency management system for providing information useful in selecting among a plurality of wireless communication networks having different and variable operating characteristics and accessed by a plurality of portable radio devices each of which is capable of accessing any of the plurality of wireless communication networks comprising:

wireless communication network monitoring means for monitoring the current network load of each of the plurality of wireless communication networks;

processing means connected with said network monitoring means for receiving a signal indicative of said current network load and for generating a signal representing current operational characteristics of each of the wireless communications networks in response thereto;

network information transmission means connected with said processing means for receiving said signal and for transmitting said operational characteristics for each of the plurality of wireless communication networks to each of the plurality of portable radio devices thereby allowing each of the portable wireless devices to selectively access one of said plurality of wireless communications networks in response to said operation characteristics.

24. The system of claim 23 wherein said operation characteristics include the cost for use of the wireless communication network.–

REMARKS

The Official Action dated November 18, 1994 has been received and its contents carefully noted. Filed concurrently herewith is a *Request for Three Month Extension of Time*, which extends the shortened statutory period for response to May 18, 1995. Accordingly, Applicant respectfully submits that this response is being timely filed.

Initially, Applicant notes that the subject matter contained in the present application is similar to that disclosed and claimed in the copending application Serial No. 08/167,003, filed December 15, 1993. Also, due to the similarity of the disclosed subject matter, it is noted that the Official Action received in the present case is similar to that recently received in that related application. A timely response has been filed in the related application and the Examiner is encouraged to carefully review the remarks set forth therein, many of which are pertinent to the present application as well.

SUMMARY OF THE INVENTION

The claims of the present application are generally directed to a radio frequency management system that operates to reallocate radio frequency spectrum among a plurality of wireless communication networks operating using different radio frequency spectrums and modulation protocols. That is, the present invention allows allocation of radio frequency resources between different wireless communication networks resulting in inter-system resource allocation.

As a result, of this inter-system resource allocation of radio spectrum, efficient use of scarce radio spectrum is enhanced. This occurs since a wireless system that may not be fully utilized can reallocate radio spectrum to another wireless system that is temporarily at or near full capacity. Therefore, as user demand for differing wireless services (such as analog voice, digital voice, analog data, CDPD, Paging, etc.) varies, frequency allocation can be varied as well, thus increasing efficiency of use.

The present invention is further directed to a method and apparatus that allows a network of wireless service providers to interact with a population of omni-modal wireless products (the subject of Applicant's related application) within a given geographic area in a manner that permits the wireless service providers to "borrow" radio frequencies from other wireless service providers within the same geographic region. As a cellular service provider in a given region finds that one of its service areas or cells has become nearly or fully loaded, frequency could be borrowed from a competitor, such as a PCS or paging service provider serving the same region. Selected omni-modal wireless product users in the overloaded area would be told to switch their omni-modal device to the "leased" frequency but to use the non-PCS communications protocol appropriate to the type of service desired by the user. Implementation of this method broadly within a given geographic region will have the effect of insuring that the available radio spectrum is used to its maximum capacity to serve the needs of the wireless users on a real time basis.

Yet another concept envisioned by the present invention includes real time "bidding" by different wireless communication networks for users. That is, in accordance with the present invention, wireless network service providers can provide cost information over a control channel and a portable unit can select an appropriate wireless network based on the advertised cost. In a similar manner, other characteristics of the wireless network could be provided to individual users to allow for selection of an appropriate wireless network having the performance characteristics demanded by each individual user by provision of appropriate user defined criteria. This use of user defined criteria to select an appropriate wireless communication network is one feature recited in at least claim 2 of the present application.

PRIOR ART REJECTIONS

Paragraph 2 of the Official Action rejects claims 1-2, 4, 9-14, 16 and 21-22 as obvious based on the combination of U.S. Patent 5,261,117 to Olson and U.S. Patent 4,144,496 to Cunningham et al. The Official Action asserts that Olson discloses every limitation recited in claim 1 except that Olson fails to disclose the claimed capacity detection means for generating a frequency request to temporarily reassign radio spectrum, which the Official Action asserts is taught by Cunningham et al.

Initially, as in the above noted related application, at least claims 1-2, 9 and 13-14 have been amended herewith to further clarify several distinguishing features between the present invention as claimed and the prior art of record. Specifically, several of these claims have been amended to clarify that the reallocation of radio frequency spectrum occurs between two different wireless communication networks (i.e. that the claims are directed to inter-system transfer rather than intra-system transfers internal to a single wireless network). Furthermore, several claims have been amended to clarify that the recited transmission protocols are radio frequency modulation protocols. As discussed below, it is asserted that significant differences exist between the present invention as now

claimed and the cited prior art and these amendments serve to further clarify these differences. Accordingly, in view of these amendments and the comments below, reconsideration of the rejection of claims 1-2, 4, 9-14, 16 and 21-22 as obvious based on the combination of Olson and Cunningham et al. is respectfully requested.

As noted in the response recently filed in Applicant's related application, Olson discloses a method to allow a radio transceiver to access several types of radio systems. Specifically, the device of Olson allows a subscriber unit to access an alternate system, such as a conventional single channel mobile relay system or trunked radio system, if an operator selected radio system is unavailable (see Abstract and Column 2, lines 6^{+}). To accomplish this objective, the device of Olson includes electronic processing circuitry (Figure 3; column 4, lines 44-64) that includes a microprocessor 302. This processing circuitry operates as shown in Figure 4 to achieve the above described access to the alternate system.

Contrary to the assertion in the Official Action, however, Applicant respectfully asserts that Olson does not disclose or suggest reallocation of radio spectrum comprising radio frequency reallocating means to reassign temporarily radio spectrum from a wireless communication network. That is, Olson provides for a radio transceiver to use either a trunked radio communication network or a conventional mobile relay communication network, depending on availability, but does not reassign radio spectrum allocated to one of these networks to the other. In this regard, in accordance with the concept of the invention as discussed above, claim 1 has been amended to further clarify that frequency spectrum allocation in the present invention occurs between a first and second wireless communication network wherein the first and second wireless communication networks operate using different frequency spectrums and using differing modulation protocols. Accordingly, in view of the absence of any teaching in Olson of this concept as now recited in claim 1, it is respectfully submitted that this rejection has been overcome for this reason alone and reconsideration is accordingly requested.

In addition, it is asserted that Cunningham et al. does nothing to overcome the deficiencies noted above in connection with Olson. Cunningham et al. discloses a mobile communication system and method for frequency reuse wherein dynamic channel assignment can be employed within a single mobile communication system. Cunningham et al. does not, however, disclose or suggest the concept of frequency spectrum channel assignment between different wireless communication networks, as now recited in pending claim 1. That is, Cunningham et al. focus on intra-system allocation of frequency resources, while the present invention is directed to inter-system allocation of frequency resources. Accordingly, for this further reason it is respectfully asserted that the Official Action has failed to establish a *prima facie* case of obviousness and reconsideration is view of the above comments is requested.

Furthermore, it should be noted that there are significant advantages associated with the inter-system allocation of radio spectrum as disclosed and claimed in the present application. First, efficient use of scarce radio spectrum can be enhanced. This occurs since a wireless system that is not being fully utilized can release some of its allocated radio spectrum to another wireless system that is temporarily at or near full capacity. Therefore, as user demand for differing wireless services (such as analog voice, digital voice, analog data, CDPD, Paging, etc.) varies, frequency allocation can be varied as well, thus increasing efficiency of use.

To the contrary, the system of Cunningham et al. is limited to reallocating frequency within the confines of a single wireless network to which the method and apparatus disclosed therein is applied. Therefore, even should a second wireless system be at or near full capacity, the system and method disclosed in Cunningham et al. is incapable of interacting with the wireless networks to allow frequency resources allocated to that single network to be temporarily reassigned to the second overloaded network. Accordingly, for these further reasons, it is asserted that the claims of the present application are not obvious in view of the combination of Olson and Cunningham et al.

Finally, with respect to several of the claims dependent on claim 1, which recite a frequency and protocol agile portable radio device substantially similar to that recited in the copending related application, it is noted that there are significant distinctions between the claimed invention and the prior art of record. These distinctions are discussed in detail in the response submitted in Applicant's related application and are summarized below for the convenience of the Examiner.

Specifically, contrary to the assertions in the Official Action, neither Olson nor Cunningham et al. appear to disclose or suggest (1) a multi-modal device having the ability to operate using differing radio frequency modulation protocols depending on the radio transmission system in use (as described on page 9, lines 17^{+} of the present specification); or (2) the advantageous selection of one wireless network from a plurality of several available networks based on specific user defined criteria such as cost, quality, security, etc. (as described on page 28, lines 15^{+} of the present specification). Each of these distinctions are discussed more fully below.

Referring to the first distinction noted above, Olson and Cunningham et al. both clearly do not disclose or suggest the claimed protocol agile operating circuit means. Applicant notes that this limitation is phrased in means-plus-function form in accordance with the sixth paragraph of 35 U.S.C. § 112. Applicant further notes the recent en banc decision by the Federal Circuit in *In Re Donaldson Co.*, 29 U.S.P.Q.2d 1845 (Fed. Cir. 1994) and the Patent Office's Examination Guidelines issued May 17, 1994 at 1162 O.G. 59, both of which address the examination of mean-plus-function limitations. Applicant believes that the Guidelines require a two-step analysis: (1) does the element in the prior art perform an identical function to the element recited in the claims under examination, and (2) if the function is identical, is the prior art structure or step the same or equivalent to the structure material or acts described in the specification of the application under examination. Accordingly, it is requested that the means-plus-function limitations present in the pending claims be examined in accordance with these guidelines.

Referring again to claim 2 of the present application, the protocol agile operating circuit means is directed to a multi-modal device that has the ability to operate using differing radio frequency modulation protocols depending on the radio transmission system in use. As noted above, one feature of the present invention that is clearly recited in claim 2 of the present application as amended is the ability to vary the modulation protocol used for a wireless transmission depending on the type of wireless system being accessed. That is, a device in accordance with the present invention is capable of operating over any one of a plurality of wireless networks using different frequencies and different radio frequency modulation protocols.

In this manner, a device in accordance with the present invention is capable of communicating over an analog cellular system, a digital cellular system, a CDPD data system, a paging system, etc. Each of these systems have, in addition to a unique operating frequency, a unique radio frequency modulation protocol. Not only is transmission at the correct radio frequency required so that the wireless system can "hear" the omni-modal device, but use of the correct modulation protocol is also necessary for successful communication with the selected system so that the wireless system can "understand" the omni-modal device.

This feature, however, cannot be found in either Olson or Cunningham et al. The Official Action asserts that Olson discloses a "protocol agile" operating circuit 302, 307, 308 for operating the frequency agile transceiver in accordance with one of the protocols as determined from a protocol control signal from 304. Referring to Figure 3 and column 4, lines 44-64 of Olson, it is noted that reference numeral 302 refers to a microprocessor, reference numeral 304 refers to switch buffers and that reference numerals 307 and 308 apparently refer to RAM and ROM / Code Plug respectively, although no detailed description of numerals 307 and 308 can be found in the body of the Olson reference.

Figure 3 and the related disclosure in Olson, however, fails to disclose or suggest the function of the claimed protocol agile operating circuit means and completely fails to disclose an element that performs an identical function to this means as required by the first prong of the *Donaldson* test. Similarly, no such disclosure or suggestion can be found in Cunningham et al. Accordingly, since the function of the disclosed elements in these references and the claimed means are not identical, it is respectfully asserted that the Office has failed to carry its burden of establishing a *prima facie* case of obviousness. Accordingly, reconsideration of the rejection of claims 1, 3, 8-14, 16 and 21-23 as obvious in view of Olson and Cunningham et al. is requested.

A second important feature of the present invention as recited in claim 2 lies in the selection of the wireless network to be used by the omni-modal device. In accordance with the present invention, this selection is performed based on user defined criteria thereby making the selection dependent on the operating characteristics of each of the available wireless networks. That is, the quality, cost, security, and other operating characteristics of each available wireless network is analyzed by the omni-modal device in accordance with guidelines supplied by the user to select an appropriate wireless network for the desired transmission. In this manner, the needs of the user are satisfied at the least possible cost, while ensuring efficient allocation of scarce radio frequency spectrum resources.

A completely unobvious consequence of the claimed invention is its capacity to convert the economics of wireless service from one driven primarily by the interests of owners and operators of wireless services into a highly competitive market in which the "interests" of end-users in obtaining the best quality service at the lowest price becomes paramount. In other words, the present invention, when implemented, will empower end users who posses omni-modal devices of the type disclosed and claimed to define on a real time basis the type of service desired and the radio frequency allocation among

competing service providers to be dynamically reassigned to achieve the most efficient allocation that meets the demands of the end users.

Several claims of the present application includes limitations directed to this concept. Claims 2 recites adaptive control means that operates in part to generate control signals in response to a user defined criteria. Claim 3 clearly recites that the adaptive control means operates to select a wireless network based on the least cost. Similarly, claim 4 recites that the network determination is based on quality of the radio transmission link; claim 5 recites that the determination is made on the probability of being dropped from a network; claim 6 based on the security of the network; and claim 8 based on the combined determination of at least two of such factors. Similarly, claim 9 further limits the device of claim 2 by reciting that the device communicates with the selected wireless communication system to determine the cost and operating characteristics of the wireless communication network.

These features of the present invention, however, are also clearly not disclosed or suggested by the prior art of record and specifically by either Olson or Cunningham et al. Specifically, Olson and Cunningham et al. both completely fail to disclose any element that operates to select a wireless network based on user defined criteria in general and on any of the specific factors noted above in particular. Moreover, Olson and Cunningham et al. clearly fail to disclose communication with the wireless system to determine the cost and operating characteristic of the system as recited in at least claim 9 of the present application. Accordingly, in view of these further distinctions between the present claims and Olson, reconsideration of the outstanding rejection is requested.

Furthermore, Applicant respectfully asserts that there has been an insufficient showing that one of skill in the art would have been motivated to combine the teachings of Olson and Cunningham et al. In the case of *In re Dillon*, 16 U.S.P.Q.2d 1897 (1990), the Court of Appeals for the Federal Circuit, sitting *in banc*, discussed the requirements for making a obviousness rejection. Specifically, the Federal Circuit stated that the

burden of establishing a *prima facie* case of obviousness lies with the Patent Office and is established when there is both (1) structural similarity between claimed invention and prior art subject matter and (2) where the prior art gives reason or motivation to make the claimed invention or to combine references to achieve the claimed invention.

In the present case, the Official Action asserts that one of skill in the art would have found it obvious to combine these teachings "for the simple purpose of acquiring a more efficient system." It is respectfully submitted that to the extent such motivation exists, it is insufficient to sustain a *prima facie* case of obviousness. Specifically, as noted above, it is well settled that any motivation for combining multiple references must be found in the prior art and must serve to motivate or encourage one of skill in the art to make the asserted combination.

In the present case, however, the prior art completely fails to suggest that one would want to combine the teachings of Olson and Cunningham et al. In fact, since Olson is directed to conventional mobile relay systems and trunked systems while Cunningham et al. is directed to a cellular radiotelephone system, it is not clear exactly how the teachings of these two references could in fact be combined. Accordingly, for this further reason, it is asserted that the rejection of claims 1-2, 4, 9-14, 16 and 21-22 as obvious based on the combination of Olson and Cunningham et al. is improper.

Paragraph 3 of the Official Action appears to reject claims 3, 5-8, 15, and 17-20 as obvious based on the combination of Olson, Cunningham et al. and U.S. Patent 5,134,709 to Bi et al. However, it is noted that the detailed discussion of the rejection appears to rely primarily upon U.S. Patent 5,127,042 to Gillig et al. and therefore the distinguishing features between the present invention and this reference are also discussed in detail below.

The Official Action correctly admits that both Olson and Cunningham et al. fail to disclose the selection of the network based on particular factors recited in claims 3-8 of the present application such as cost, probability of being dropped, security, or past

experience. The Official Action, however, appears to assert that the use of such criteria to select between areas is common as shown by Gillig et al., which it is asserted discloses a network selection based on cost.

As noted in Applicant's response in the related application, Gillig et al. is directed to a combination cellular/cordless telephone that operates using both a cordless base station and a cellular base station. The telephone operates using a cordless radio channel when the telephone is in range of the cordless base station and uses a cellular radio channel if the telephone is outside the range of the cordless base station (See abstract and column 1, lines 40-44). Although Gillig et al. does recognize that the cost of a cellular call is higher than that of a cordless call (column 1, lines 26-27), the reference clearly determines which system should be used based on the geographic position of the telephone (i.e. the distance of the telephone from the cordless base station) and not upon any differentiation in the cost between these services. In this regard, Gillig et al. allows a user to use a lower cost transmission network if that is available, but fails to disclose or suggest user defined criteria, which could include cost, for selecting between a plurality of available networks as claimed in the present application.

In contrast, the present invention allows a user to select from a plurality of available wireless networks depending on the specific and unique needs of that user. Some users may prefer least cost while others may prefer higher security. The present invention allows each user to define these user specific criteria and to select an appropriate network in response thereto. This concept, as claimed, is not disclosed or suggested by any of Olson, Cunningham et al. or Gillig et al. and reconsideration is accordingly requested.

Furthermore, as noted above, Applicant respectfully asserts that there has been an insufficient showing that one of skill in the art would have been motivated to combine the teachings of Olson, Cunningham et al. and Gillig et al. as done in the Official Action. The Official Action asserts that one of skill in the art would be motivated "for the

purpose of providing the user with the lowest cost available to the user" and since "one would want to provide a system that is more flexible to the user." Again, it is respectfully submitted that to the extent such motivation exists, it is insufficient to sustain a *prima facie* case of obviousness. Specifically, as noted above, it is well settled that any motivation for combining multiple references must be found in the prior art and must serve to motivate or encourage one of skill in the art to make the asserted combination. In the present case, however, the prior art completely fails to suggest that one would want to combine the teachings of Olson, Cunningham et al. and Gillig et al. Olson is directed to conventional mobile relay systems and trunked systems, Cunningham et al. is directed to a cellular radiotelephone system, and Gillig et al. is directed to cordless/cellular telephones, and it is not clear how these references could be combined to achieve the present invention. Accordingly, in view of all of these factors, it is asserted that the rejection of claims 3, 5-8, 15 and 17-20 as obvious based on the combination of Olson, Cunningham et al. and Gillig et al. is improper for this further reason and reconsideration is requested.

Also, as noted in Applicant's related response, U.S. Patent 5,134,709 to Bi et al. is directed to a process and device for flexible channel assignment in a cellular system in which various transmission frequencies or channels are allocated to various cells in a manner that utilizes the available spectrum as efficiently as possible. Depending on a number of factors, the number of channels required for a given cell is determined. Bi et al., however, differs from the present invention for many of the same reasons discussed in detail above in connection with Olson. That is, Bi et al. does not appear to disclose or suggest the selection of one wireless network from a plurality of available wireless networks in accordance with predetermined user criteria or the variation of a radio frequency modulation protocol depending on the selected wireless network. Moreover, Bi et al. appears to be directed to frequency assignment at a system level performed by the cellular system itself and not as a user level in response to user

provided criteria as in the present invention. Accordingly, the presently pending claims ar believed to be patentably distinguished from Bi et al. and reconsideration is requested to the extent that the Official Action is relying upon this reference.

Finally, another concept envisioned by the present invention and recited in new claims 23-24 includes real time "bidding" by different wireless communication networks for users. That is, in accordance with the present invention, wireless network service providers can provide cost information over a control channel and a portable frequency and protocol agile unit can receive this information and select an appropriate wireless network based on current system operational characteristics such as cost. Furthermore, to the extent that one network offers desired operating characteristics and is successful in securing high user demand, necessary frequency resources can be reallocated to that wireless network. As a result, efficient use of radio spectrum at the least possible cost can be ensured. This concept of the present invention is recited in new claims 23-24 and favorable consideration of this claim in view of the comments herein is requested.

FORMALITIES

Paragraph 4 of the Official Action rejects claims 1-22 as indefinite. Specifically, the Official Action asserts that the terms "and/or" and "adapted to" as used in claims 1, 8-10, 12 and 14 are unclear. In response, these claims have been amended to clarify the claimed subject matter and reconsideration in view of these amendments is requested. Specifically, the term "and/or" has been deleted and the claims amended to more clearly recite the differing operating characteristics of the present invention as discussed above. The term "adapted to" has also been changed to more positively recite the capabilities of the claimed structure. Also, claim 13 has been amended to correct the antecedent basis problem noted in the Official Action. It is believed that these amendments place the claims in accord with the requirements of 35 U.S.C. § 112 and reconsideration in view thereof is requested.

Paragraph 5 of the Official Action objects to Figures 2, 3, 5, 6A and 8 asserting that the box inside box 1 should have an appropriate descriptive label. In response, a *Request for Proposed Drawing Change Approval* is submitted herewith including changes to correct this informality. Specifically, the drawings have been amended to label the box as a "Radio Communications Circuit" as described in the specification in connection with these Figures. No new matter is added by this correction and review and approval in the following Official Action is requested.

Paragraph 6 of the Official Action objects to the title of the present application as non-descriptive. Although the Official Action does not specify why the present title is non-descriptive, the title of the invention has been amended to read "Apparatus and Methods for Reallocation of Radio Spectrum." It is respectively submitted that this title is more clearly descriptive of the invention to which the claims are directed and reconsideration in view of this amendment is requested.

CONCLUSION

For all of the above reasons, it is respectfully submitted that claims 1-24 are not disclosed or suggested by the prior art of record and reconsideration of the outstanding rejections in view of the amendments and arguments presented herewith is respectively requested. If the Examiner feels that any further discussions would be beneficial in this matter, it is requested that the undersigned be contacted.

Respectfully submitted,

Eric J. Robinson
Reg. No. 38,285

Sixbey, Friedman, Leedom & Ferguson, P.C.
2010 Corporate Ridge, Suite 600
McLean, Virginia 22102
(703) 790-9110